

## ABSTRACT OF THE DISCLOSURE

Apparatus and methods for regulating methanol concentration in a direct methanol fuel cell system without the need for a methanol concentration sensor. One or more operating characteristics of the fuel cell, such as the potential across the load, open circuit  
5 potential, potential at the anode proximate to the end of the fuel flow path or short circuit current of the fuel cell, are used to actively control the methanol concentration.

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